PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

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Application No.: New Rule 1.53(b) Divisional of U.S.S.N. 09/077,029

Filed: July 10, 2001 Docket No.: 040499.01

For: MATRIX TYPE DISPLAY DEVICE AND MANUFACTURING METHOD THEREOF

PRELIMINARY AMENDMENT

Director of the U.S. Patent and Trademark Office
Washington, D. C. 20231

Sir:

Prior to initial examination, please amend the above-identified application as follows:

IN THE CLAIMS:

Please cancel claims 1-49 without prejudice to or disclaimer of the subject matter contained therein.

Please add new claims 50-100 as follows:

--50. A process for forming a pattern on a substrate by deposition of an organic material comprising the steps of:

depositing a semiconducting organic material in a solvent onto a substrate by ink-jet printing; and

evaporating the solvent, whereby said organic material remains on the substrate.--

--51. The process of claim 50, further comprising drying the deposited material to remove said solvent.--

--52. The process of claim 50 wherein said organic material is a luminescent polymer.--

--53. The process of claim 50 wherein said material includes polyvinylcarbazol film.--

--54. The process of claim 50 wherein said solvent is chloroform.--

--55. The process of claim 50 wherein said material includes light emitting dyes.--

--56. The process of claim 55 wherein said light emitting dyes include coumarin and nile red.--

--57. The process of claim 56 wherein said coumarin is coumarin 6.--

--58. The process of claim 56 wherein said coumarin is coumarin 47.--

--59. The process of claim 56 wherein said coumarin is coumarin 6 and coumarin 47.--

--60. The process of claim 50 wherein said organic material is a mixture of polymers and other organic molecules.--

--61. A process for making organic light emitting diodes comprising the steps of:

depositing a semiconducting organic material in a solvent onto a substrate by ink-jet printing; and

evaporating the solvent, said organic material remaining on the substrate.--

--62. The process of claim 61 wherein said depositing step operates an ink-jet printer in a mode to create a continuous sheet of polymer.--

--63. The process of claim 62 further including the step of metallizing said ink-jet printed substrates.--

--64. The process of claim 63 further including the step of depositing with ink-jet printing top metal contacts on said substrate.--

--65. The process of claim 64 wherein said top metal contacts are deposited through a shadow mask.--

--66. The process of claim 61 further including the step of depositing with ink-jet printing bottom metal contacts on said substrate.--

--67. The process of claim 64 wherein said top metal contacts are deposited in a pattern.--

--68. The process of claim 66 wherein said bottom metal contacts are deposited in a pattern.--

--69. The process of claim 61 further wherein said organic material includes light emitting dyes.--

--70. The process of claim 69 further including the step of depositing top contacts on said organic material by ink jet printing.--

--71. The process of claim 70 further including the step of depositing bottom contacts on said substrate by ink-jet printing.--

--72. A process of forming thin film field effect transistors comprising the steps of:

forming a gate electrode on a substrate;

forming a gate insulator over said gate electrode;

forming a polymer semiconducting layer on said insulator by ink-jet printing; and

forming source and drain contacts on said semiconducting layer.--

--73. The process of claim 72 wherein said gate insulator is formed by ink-jet printing, and the semiconducting layer by other techniques.--

--74. The process of claim 72 wherein the source and drain contacts are applied directly on the gate insulator before the semiconducting layer is deposited.--

--75. The process of claim 73 wherein the source and drain contacts are applied directly on the gate insulator before the semiconducting layer is deposited.--

--76. The process of claim 72 wherein the semiconducting layer comprises a non-polymeric organic film or a polymer/small organic molecule blend.--

--77. The process of claim 73 wherein the semiconducting layer comprises a non-polymeric organic film or a polymer/small organic molecule blend.--

--78. The process of claim 74 wherein the semiconducting layer comprises a non-polymeric organic film or a polymer/small organic molecule blend.--

--79. A process for forming a pattern on a substrate by deposition of an organic material comprising the steps of:

depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and

evaporating the solvent, whereby said organic material remains on the substrate.--

--80. The process of claim 79, further comprising drying the deposited material to remove said solvent.--

--81. The process of claim 79 wherein said organic material is semiconducting.--

--82. The process of claim 79 wherein said organic material is a luminescent polymer.--

--83. The process of claim 79 wherein said solvent is chloroform.--

--84. The process of claim 79 wherein said material includes light emitting dyes.--

--85. The process of claim 84 wherein said light emitting dyes include coumarin and nile red.--

--86. The process of claim 85 wherein said coumarin is coumarin 6.--

--87. The process of claim 85 wherein said coumarin is coumarin 47.--

--88. The process of claim 85 wherein said coumarin is coumarin 6 and coumarin 47.--

--89. The process of claim 79 wherein said organic material is a mixture of polymers and other organic molecules.--

--90. A process for making organic light emitting diodes comprising the steps of:

depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and

evaporating the solvent, said organic material remaining on the substrate.--

--91. The process of claim 90 wherein said depositing step operates an ink-jet printer in a mode to create a continuous sheet of polymer.--

--92. The process of claim 91 further including the step of metallizing said ink-jet printed substrates.--

--93. The process of claim 92 further including the step of depositing with ink-jet printing top metal contacts on said substrate.--

--94. The process of claim 93 wherein said top metal contacts are deposited through a shadow mask.--

--95. The process of claim 90 further including the step of depositing with ink-jet printing bottom metal contacts on said substrate.--

--96. The process of claim 93 wherein said top metal contacts are deposited in a pattern.--

--97. The process of claim 95 wherein said bottom metal contacts are deposited in a pattern.--

--98. The process of claim 90 further wherein said organic material includes light emitting dyes.--

--99. The process of claim 98 further including the step of depositing top contacts on said organic material by ink jet printing.--

--100. The process of claim 99 further including the step of depositing bottom contacts on said substrate by ink-jet printing.--

REMARKS

Claims 50-100 are pending. By this Amendment, claims 1-49 are canceled, and claims 50-100 are added.

Prompt and favorable examination on the merits is respectfully requested.

Respectfully submitted,

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